The MAC Flyer

AUGUST 1978

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MILITARY AIRLIFT COMMAND

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The MAC Flyer

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For Greater Safety and Efficiency in MAC Air Operations

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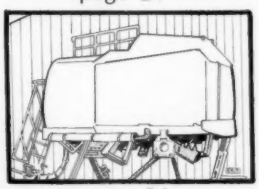

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The MAC Flyer is published by the Directorate of Safety, Headquarters Military Airlift Command. The contents are informative and not regulatory or directive. All names in accident stories are fictitious and no information concerning aircraft accidents may be construed as incriminating under Article 31, UCMJ.

Contributions, comments and criticisms are welcome. Write: The Editor, *The MAC Flyer*, HQ MAC/IGFE, Scott AFB, IL 62225, or call: (618) 256-3534 or Autovon 638-3534. The editor reserves the right to change manuscripts to improve them or correct technical errors.

MAC units establish requirements for the magazine through their publications distributor (DAPD).

Private subscriptions are available from: The Superintendent of Documents, Government Printing Office, Washington, DC 20402. Price: $1.00 per copy, $12.00 per year (foreign addresses: $1.30 per copy, $15.00 per year). Changes in address for subscription mailings should be sent to the above address. Give old and new addresses, including both zip codes.

Distribution: F, X; OPR: HQ MAC/IGFE.

Flyer Call

If you check the masthead to the left, you'll notice that *TMF* has a new supervising editor. As I am now relegated to the position of a *TMF* alumnus, Major Jim Gibson has graciously consented for me to pass on a few parting thoughts concerning my three-plus years on the *Flyer's* staff.

After several years of associating with safety moguls around the world, I have one penetrating thought: it ain't a bad deal. A tour in the safety business has a great deal of redeeming social value for the crewmember who has aspirations—or for the airman who's simply interested in staying alive. The repetitiveness of hazard and accident reports, HATR's, and rumors has a way of curing myopia of the mind's eye. Making a landing at a field below minimums or with crosswinds out of limits is no longer the mark of a "good stick" but immaturity and egocentrism.

For commanders and managers, I'd recommend that you select your safety types as though you were choosing a son- (or daughter-) in-law. And then give them your total support. Respect their professional opinions as you do those of the stan/eval troops. And when every crewmember in your outfit understands that flying safety is your and *his* responsibility, then you've done your job.

Finally, a word of thanks to you zealots who have contributed to making the *Flyer* fly. Your stories, letters, pictures, and feedback have made the on-going chore of publishing *TMF* a rare pleasure. Write often.

And fly safe. **OLB**

A few little misunderstandings nearly add up to a big problem.

To rephrase an old cliche, "Flying is hours of boredom punctuated by unpleasant surprises" —and one of the things that frequently causes those moments of no-notice nastiness is noncommunication. The following story, taken from a hazard report, provides a perfect example of what can happen when people stop talking to each other. Naturally, certain details have been altered to protect the participants.

The C-5 crew was planning a CONUS-to-overseas mission with an aerial refueling en route. They'd already gotten their weather briefing when plan A changed to plan B. Forecast turbulence on the refueling track cancelled the AR and forced a fuel stop at the opposite coast. They mentioned to the weather briefer that what had been their missed-AR alternate was now their destination and were told the forecast was still good. Although there was a crosswind of 12 knots with gusts to 20, it was within limits. But the Galaxy's crosswind landing gear system was inoperative, so the crew made a mental note to keep an eye on the winds.

The jumbo departed on time. About halfway to destination, the crew called a nearby Air Force base for an update of the forecast; this time the forecast winds were 12 knots, gusting to 25. What the forecaster didn't tell them was that the last two hourly observations included gusts as high as 42 knots. Since the new forecast was essentially the same as the old, the crew pressed on.

The next opportunity for somebody to pass the word came when the Galaxy drivers called the destination command post to pass their block time and to make sure that all concerned knew about the inoperative crosswind gear. Nobody said anything about winds, either current or forecast—even though the current winds were still gusting above 40 knots.

Two hours later, when the Galaxy was in UHF range, the crew finally got the word: the wind was blowing across the runway at 25 knots with gusts to 42 and a point warning had been in effect for about five hours. In fact, the decision had already been made to divert the aircraft; but that information didn't get communicated either. Fortunately, there was enough JP-4 left to get the big bird safely on the ground at another MAC base.

When safety types started looking into the incident to find out who didn't say what to whom and why they didn't say it, another bit of noncommunication got in the way. The crew had filed an HR as soon as they got back on the ground, but nobody had passed the word to the people involved. By the time the investigation got under way, there wasn't much to go on except some rather stale memories; so the chances of finding out how and why the system broke down are pretty slim.

Sure, we know people are reluctant to talk when they feel they might have made a mistake. But safety investigations aren't made to place blame; they're there to find out what went wrong so we can fix it.

We only learned three things from this one: First, that a lot of information didn't get to the people who needed it; second, that whatever flaw in the system caused the whole thing is probably still there; and third, that somewhere, someday, another crew is going to get a very unpleasant surprise.

Second Place, 1978 MAC Flying Safety Writing Contest

The Amen Corner

If everybody agrees with you, you're probably right. But without some loyal dissent, you'll never know for sure.

Prologue: Webster's *New World Dictionary* defines "amen corner" as "those seats to the side of and facing the pulpit of certain churches, especially in some small towns of the United States, where those leading responsive amens usually sit." While this is an excellent literal definition, memories recalled from experiences and observations as a young man can embellish such a broad-brush description.

I recall that the occupants of the amen corner were not all cut from the same bolt of cloth and their motivations varied considerably, often by their own admission. For the new convert, the motivation would be to "keep his personal fire burning"; for a budding politician, it could serve as a visible platform to help shore up a questionable reputation; for those who spent Saturday night in the company of demon rum or other evils, it appeared to be a painful penitence; for some church officials of whom it was expected, it was the duty of a benign cheerleader whose "amens" appeared to be punctuation marks at the end of passages — passages which may have contained pearls of wisdom or incoherent babblings. This oral moral support unthinkingly rendered could also be embarrassing as in: "It is my sad duty to tell the congregation that Miss Wilson, our long-devoted Sunday School teacher, has fallen from grace and run off with Big Jake Thomson, the town bootlegger." "Amen . . . huh . . . uh, 'scuse me."

When recalling the amen corner and its occupants, I can see a correlation with a type of person sometimes found around the Air Force. The purpose of the amen corner was to let the preacher know he had moral support for his spoken words. The word amen is used to express approval. While the ready "Amen!" can build the confidence and lift the spirit of the speaker, indiscriminate amens may build a false sense of confidence. It is human nature to want people around you who agree with the positions you take and are supportive of your recommendations, but an unquestioning advocate in your amen corner is a potential hazard. He is also a wasted resource doing a disservice to you and to himself because he is no longer in the decision-making process.

Maybe a couple of examples might bring these amiable fellows into focus a bit better. Check to see if you've caught any of these acts around your corner of the Air Force.

Act I, Scene 1:
(Plush office)

Col K: "Hi, Fred, this is John Kinarzi, I'm down at Doodlebug Air Patch. I just got a squadron and this guy I've inherited as an ops officer is a real stickler for details—he's driving me crazy. His time is about up. How would you like to be my ops officer? I need somebody like you who doesn't get excited about nickle-dime procedures and stuff. They've got so many squares to fill nowadays, there ain't no way to fill 'em anyway. We'll just fly and wing it like we used to in the Fightin' 85th . . . we had a good unit, didn't we? Right. Okay? Okay! Listen, I'll take care of the assignment papers—give my love to Judy and the kids."

by Lt Col James S. McReynolds
435 TAG
RAF Mildenhall, United Kingdom

Act I, Scene 2:
(Briefing room)

Col K: ". . . and one last thing, make damn sure you log five low level routes today. The one route and four race tracks are like five routes. Right, Fred?"
Fred: "Right, Colonel Kinarzi."
Col K: "And be sure to log in-trail formation—five minutes is still in-trail. Right, Fred?"
Fred: "Amen."
Col K: "Anyway, we're flying proficiency after the tactical work so we'll have enough total time not to leave an audit trail for the inspection weenies."
Fred: "Amen, Colonel K."

Act I, Scene 3:
(IG outbrief)

Briefer: "The basic causes of failure of this ORI are serious deficiencies in this unit's training program. Informal conversations with several aircrewmembers indicate that 'pencil-whipping' training requirements is a way of life, openly condoned by the commander and supervisory personnel."
Col K: "You know what, Fred? These turkeys had one thought in mind when they left headquarters and that was to bust us. Our guys are as good as any anywhere. Right, Fred?"
Fred: "I guess so, Colonel K."

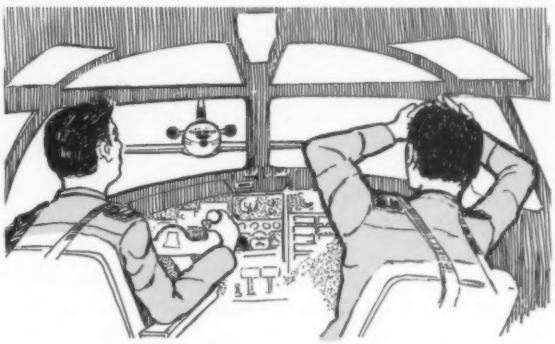
(CURTAIN)
(for the Act, the Scene, Fred and Col K—
not necessarily in that order)

ACT II, Scene 1
(On the office telephone)

Bill: "Hey, Jack, Bill Collier. I can get off next weekend. How about putting me on that cross-country and see if Jim Daniels can fly with me as copilot. He's really a nice guy to fly with." (Read: Jim Daniels doesn't embarrass me by calling out piddling deviations of three or four hundred feet of altitude or fifteen degrees or so of heading deviation during instrument approaches.)

Act II, Scene 2:
(In the soup at 15,000 feet)

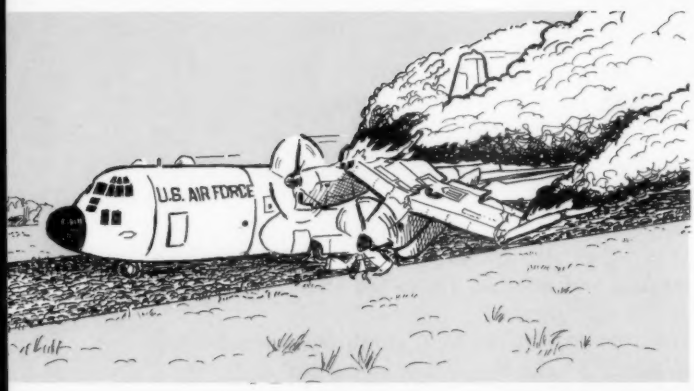
Bill: "God it's rough. If that controller doesn't give us a higher altitude soon, let's turn off the altitude readout and ease on up to see if we can get out of this turbulence."
Jim: "Amen. I'm ready to climb now. I don't feel so good."
Bill: "Then turn off the old Mode C and let's head on upstairs and you'll feel mucher gooder better sooner. Right, podner?"
Jim: "Amen to that . . . the big sky theory will take care of us."



ATC controller: "Bingo 19, I've lost your altitude readout; recycle, please. Your traffic is a 727 at one six thousand, opposite direction at one mile. I'll have a higher altitude for you shortly."
ATC controller: "Bingo 19, I've lost your squawk—American 809, how do you read—Bingo 19, do you read Center?"

(CURTAIN)
Act III, Scene 1:
(In hangar with large aircraft in background)

Chief of Maintenance: "How are those guys in the dock doing on the phase inspection on 684? We're down to the point where we're going to have to start cancelling sorties and you know what the Old Man said about that—'cancel a sortie for lack of airplanes and you've cancelled your leave!' If my leave's cancelled now, my wife is going to come



unglued!"

Maintenance Officer: "Yeah, I know, but we're in a bind. The NDI equipment we use to check for cracks in the wing is out of commission and we don't have the part. The part is coming from the factory. We've tried to go collateral but our sister units are hurtin' too. So, we can expect about three days."

Chief of Maintenance: "We can't wait three days! When was the last time we found a crack in a wing?"

Maintenance Officer: "We found a small one about three months ago, sir . . . but we don't find one often."

Chief of Maintenance: "Then tell the inspection dock to button up 684 and roll it out today for FCF and we'll put it on the schedule for tomorrow. That will keep the Old Man happy, my wife happy, me happy, and life around here will be less miserable for everybody."

Maintenance Officer: "Amen to that."

Act III, Scene 2
(In the control tower)

Argo 72: "Baffle Tower, Argo 72 on base, gear checked for the assault zone."

Tower controller: "Argo 72, roger, winds three five zero at one six, cleared to land, assault zone."

Argo 72: "Argo 72. Roger."

Tower controller: "Argo 72, are you experiencing difficulty?" (Aside) His left wing fell off! He's on fire!

Tower controller (on crash network): "C-130, tail number 684 has broken up on the assault zone. Aircraft on fire! My God, look at the flames! ! !"

(CURTAIN)

Epilogue: Although the scenes in this story are fictitious, there is enough truth in them to make a few of us wince. They all contain intentional, unprofessional acts of expediency with at least two people involved—one who perpetrated the act and one who knowingly submitted to the expediency, who, in effect, said "Amen."

In practice, the distinction between right and wrong is seldom black and white. But the principle is: professionals do not knowingly submit to expedient methods which degrade the readiness of the force or could get someone hurt. The next time you feel it necessary to submit to such an expediency, think of the amen corner.

ABOUT THE AUTHOR

Colonel McReynolds enlisted in the Air Force in 1954 and was assigned to the Automatic Tracking Radar and ICBM Guidance career field. He received his commission through OCS in 1960, completed pilot training in 1962, and spent the next eight years in tactical airlift and special operations flying C-130's. Colonel McReynolds' C-130 experience includes three years in wing stan/eval at Sewart AFB, Tennessee, and a year as an aircraft commander and flight examiner with the Combat Talon program in Vietnam. A graduate of Syracuse University, the author is presently assigned to the 435 TAG as Chief of Current Operations.

Mishaps with a Moral

Pay Attention!

We've all allowed complacency and distraction to divert our attention. The causes are as varied as people—routine, boredom, personal problems, gregariousness and attention fixation. But these human frailties can be killers when they divert you from being an aircrewmember and break down crew coordination and discipline. Here are some incidents that happened when crew coordination broke down. Some were little, some big; some were embarrassing, some tragic.

Little Things

The crew started the transport's four engines, ran their checklists, and taxied for takeoff. On takeoff roll, when they noticed three of the engines winding down, the pilot aborted the takeoff. There was no damage—not even a blown tire—and no injury to the passengers. The crew, however, suffered from acute embarrassment. When "Fuel panel set," was called before taxi, the switches hadn't been moved. The crew started the takeoff with all main-tank fuel boost pumps off and eight fuel-low-pressure lights staring them in the face. The engines flamed out because of fuel starvation.

Here's another "little" incident. The crew was assigned a cargo mission from an East Coast port to a Caribbean island. The flight plan was routine—airways and radar contact all the way. Preflight, departure, climb, and cruise were normal and the near-perfect weather was punctuated only by a few cumulus clouds along the coast.

As the crew prepared for a no-sweat arrival, the copilot checked the destination weather. It wasn't as good as forecast. Rainshowers were holding the field near nonprecision approach minimums, so the AC briefed the published tacan approach with a GCA pickup on final.

Still in the clouds, the AC leveled the transport at the MDA and told the right-seater to request a precision final. The controller politely replied that the PAR was inop—notamed out.

Fortunately, the ragged clouds let up a little about two miles out and the copilot spotted the approach lights off to his right. The pilot aligned the aircraft with the runway and landed.

Inside base ops the crew checked the notam board. There it was, clearly posted, "PAR OUT."

The copilot asked the obvious question, "Who was supposed to check the notams?"

"I guess we all should have," responded the navigator.

The AC was red-faced. Each crewmember thought everybody else was backing him on the flight planning. They had all overlooked the obvious because the mission was routine—easy. There was embarrassment but fortunately no accident report.

These "little" errors are warnings that crew coordination and discipline are falling apart. They say it's time for you to check your professionalism. But not all breaches in crew coordination and discipline go unnoted—some cause accidents.

Big Ones

An Army unit needed a resupply airdrop and called the airlift control center. The schedulers tacked the aerial delivery onto the end of a passenger airlift sortie. No big changes involved—the crew was rested and qualified.

Just before midnight the duty officer alerted the flyers for the predawn passenger run and the midmorning airdrop. After they ate breakfast, the officers went to operations for briefings and the enlisted crewmen started preflighting the transport.

The ops briefings pointed to a routine mission. Their first sortie was into a familiar airfield to pick up some pax and return to base. The airdrop was uncomplicated and well planned. Briefings from the intelligence and weather folks didn't reveal any new problems. With flight planning completed, the officers headed for the airplane. Preflight hadn't turned up any maintenance problems, so everybody was set for an early departure.

The copilot made the takeoff and flew the standard departure. The checklists, radio calls, and clearances clicked into the routine. After leveloff, the AC took control of the airlifter.

About 30 miles from the airfield and just before morning twilight, the crew finished the descent checks. Their routine letdown was interrupted by an intermediate leveloff for conflicting traffic and a deviation around some scattered clouds. These alterations put the transport on final approach too high for a safe landing, so the pilot made a go-around. On downwind the crew checked altitude, airspeed, and configuration—everything was set.

Starting a right turn to base, the AC retarded the power. All the crewmembers were looking for the dimly lighted runway and nobody noticed the airspeed and altimeter winding down. When the left-seater spotted the runway, he believed he was too close in and extended landing flaps—the airspeed continued to decrease. Finally, the AC glanced inside to check the heading and spotted the dangerously low airspeed and altitude. He applied maximum power, lowered the nose a little, and commanded, "Flaps—fifty." But it was too late. The aircraft stalled and crashed.

In a similar incident, an aircrew was tasked to deliver passengers and supplies to a remote airfield. The flight was routine until they were established on the contact final approach. Showers reduced the forward visibility, but the crew could still see the ground. Both pilots diverted their attention outside, trying to keep the airfield in sight. The AC didn't notice that the transport wasn't configured with landing flaps and allowed the airspeed to bleed off to approach speed. As the airspeed decreased below half-flap stall speed, the transport stalled and rolled off to the right. The pilot started a recovery by applying maximum power. Recovery was too late—the transport crashed in a near-vertical descent, slightly nose high, with the flaps up.

These last two mishaps demonstrate what happens when nobody is minding the machine, when a crew's attention is channeled toward watching the airfield and not the aircraft.

Emergencies also present opportunities for attention diversion. One classic example was the crash of an L-1011 while the cockpit crew was trying to fix a landing gear indicator problem. Controlled by the autopilot, the transport slowly descended and the crew ignored the altitude deviation warning signal as they tried to install an indicator lens. The pilots finally redirected their attention to the flight instruments when the ATC controller directed a turn, but their attempted recovery was too late.

More recently, another crew allowed their cargo jet to fly itself into a mountain while they tried to analyze a gear malfunction. The approach controller cleared them into a holding pattern with plenty of terrain clearance so they'd have time to talk with maintenance experts on the ground. For unknown reasons the transport left the holding pattern and headed toward the mountains. The controller saw the deviation and tried to warn the crew, but the call was not in time.

One obvious message from these accidents is this: Somebody has got to fly the airplane. Dash Ones put it plainly at the beginning of the emergency procedures section: "Maintain aircraft control." However, little breakdowns in crew discipline and coordination can lead to loss of that control. Our aircraft fly with aircrews—instead of a single pilot—which should improve safety, among other things, through a system of crosschecks. We can do our part by being experts, crewmembers who pay attention to our own job and everything that's going on around our aircraft. The aircrew then becomes a team that's involved in accomplishing the mission together safely—and that's what we're here for.

Not in My Cockpit

An opinion by Captain Ed Carroll, United Airlines

(This article is reprinted courtesy of The Cockpit. *Captain Ed Carroll is a United Airlines Boeing 747 captain and Vice President, Flight Standards and Training. Among other duties, he manages United's flight training center at Denver, recognized as one of the world's finest.—Ed.)*

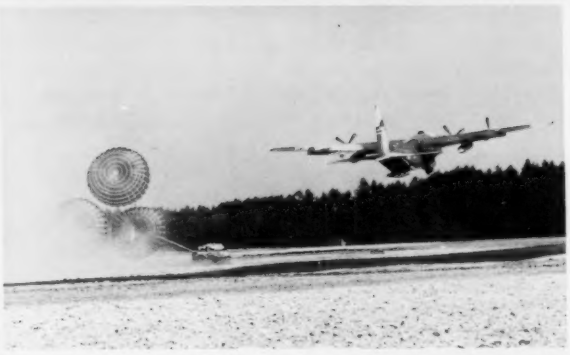
People have been known to hear a scream in the night, rush to the window, and watch passively as a crime is committed. There is nothing new or different in such an incident and each of us might righteously say, "Not me, I'd speak out—I'd do my part, I'm a concerned citizen." As members of a respected profession, I trust that we would always have the strength of character to support our beliefs with courage and conviction—without fear of harm, embarrassment, or ridicule. It's because of that long-held confidence that I'm now puzzled. Puzzled to find subtle evidence that possibly some of us are, within our own domain, the cockpit, being less than strong as captains in the exercise of our authority or, for the rest of the crew, not willing to contribute as part of the cockpit team because we might be open to rebuke from the captain.

Consider two recent incidents: In one a level-off altitude is busted during descent; in the other the active runway was taken, without a clearance. In both cases with only slight variation, one crewmember misinterpreted the clearance, the second didn't hear it, and the third heard but hesitated in speaking up because the other two were presumed "to know what they were doing."

Once again I expect the righteous cry, "Not me, not in my cockpit—I'd speak up. No one is going to get me killed!" Okay, I'll accept that—but only if each of us is committed to fulfilling his responsibility as part of the crew. Only if we can accept that the captain will exercise his authority without concern for how it will be perceived, except as being professionally administered. Only if the rest of the crew will understand the absolute necessity for being totally involved as a participating, contributing part of the team, without any assumptions in moments of doubt, fear of asking a dumb question, or worry about hurting someone's feelings.

In our environment there is no room for a lack of proficiency, confidence, courage or cooperation. There never has been, and it is even more true today as we look around and find that we are seeing an ever-increasing number of new faces in every seat and in every aircraft. One of our pilots put it very well in a report he recently submitted through our Flight Safety Awareness Program. He said, "If we are going to live—and stay alive—in today's environment, we're going to have to use standard procedures." Let's make it an adjunct to our "Standard Procedures" that we will eliminate apathy, complacency, assumptions, inattention, and the fear of rebuke from our cockpits. If we do, we can then say with complete confidence, "It won't happen, not in my cockpit!"

The TALO: MAC's Man in the Army



He may wear fatigues, sleep in a tent, and drive a jeep, but he's a vital part of the airlift business.

"Dancer 51, Dancer 51, this is Chesty 33. Ready to copy an immediate airlift request?"

An element of the Third Brigade has been cut off by the enemy and needs ammunition—right now. Only an immediate aerial resupply mission can prevent their being overrun.

In the Army Tactical Operations Center, the pace quickens. The G-3 Air turns to an Air Force officer standing nearby and asks his advice. What's the best solution—an airland mission or a CDS drop into the clearing just south of the friendly position?

The scene could be a training

by Lt Col Curtis W. Rosler (USA)
and
Maj Don O. Christian (USAF)
Hq 22 AF
Travis AFB, California

exercise in the desert west of El Paso, or it could be the real thing in the Middle East or Korea. The Air Force officer serving with the Army unit? He's the Tactical Airlift Liaison Officer—the "man on the spot" who links MAC with its biggest customer.

Specifically, the TALO is "Mr. Airlift" to his Army unit. He's an experienced MAC aircraft commander whose job is to advise the Army commander and his staff on the capabilities and use of MAC airlift resources. He helps prepare deployment and employment plans, conducts training sessions, and serves as the central point of contact for the MAC wing affiliated with his Army unit. And when the unit moves out, whether it's to an exercise area or a shooting war, the TALO goes along.

TALO's came under MAC command following the airlift consolidation in November 1975. Prior to the consolidation, their duties were limited to advising the Army on tactical airlift matters. Today, MAC has over 40 TALO's assigned to Army units around the world. Their duties are now much broader, including both tactical and strategic airlift.

There are two types of TALO's in MAC. Those assigned full-time to U.S. Army corps, divisions, regiments, and brigades are called OL (Operating Location) TALO's. The second type, a recent addition to the TALO program, is the Wing TALO. Although assigned to an Airlift Control Element (ALCE) at a MAC wing, the Wing TALO's first priority is to deploy on a TDY basis to support his Army unit. When he's not wearing his TALO hat, he works as an ALCE operations officer.

The TALO is "Mr. Airlift" to his Army unit.

In addition to his normal duties, the TALO may find himself involved in special joint service projects. During the YC-14/YC-15 test program, the Army's M60A2 battle tank had to be loaded on both aircraft to evaluate their capability for handling outsize equipment. The project officer for that test was a TALO. Other projects involving TALO's might include testing of new joint tactical airlift concepts or new equipment proposed for the Tactical Air Control System.

Naturally, there's some training involved in getting ready for this kind of job. Officers selected for a TALO assignment — normally senior captains or majors who've volunteered for the duty—start training at Air/Ground Operations School, Hurlburt Field, Florida. They spend three weeks learning about the Tactical Air Control System, joint service operations, combat field training, and Army organizational structure. The next stop is the appropriate MAC numbered air force for a specific mission briefing. TALO's assigned to airborne units get additional training at the U. S. Army Jump School before assuming their duties.

Most officers who have served as TALO's point to their tour with the Army as one of the most satisfying of their careers. Working with a Tactical Air Control Party (TACP) involves a lot of teamwork, and that means a pretty broad education for the TALO. Along with his normal airlift duties, the TALO soon learns to handle close air support and reconnaissance missions — knowledge which is bound to be useful in future staff and management jobs. It's a valuable opportunity for a close look at other commands, other services, and the nuts and bolts aspects of a combat operation.

"Combat operation," of course, is the name of the game for all of us. As the technology of war becomes more complex and response time more critical, MAC's responsibility to provide fast and effective airlift keeps growing. And the man responsible for that rapid and efficient service is the TALO—MAC's man in the Army.

The Swinging Crew Chief

by Capt Phillip J. Olson
and
Capt Irving E. Greenberg
Det 1, 39 ARRW
Homestead AFB, Florida

The stirring saga of two happy-go-lucky Huey jocks, Wonder Woman, and the fire guard who wasn't there.

Certainly I always use the checklist! Good old challenge and response—it's been drilled into me so much these few years in MAC that my wife has begun to make snide little comments about our love life. But that's another story. This story is about one fateful day in that swell Bell, the Huey.

It started off as a typical day at the office. In at 0700 (duty day starts at 0730 but my boss says seven is good OER material). A little paperwork before briefing for a flight at eight, then into the air on a combat SAR training mission. (Ahhh—there's nothing like flinging your body across the treetops at a breathtaking 100 knots—or .15 Mach for you angle-of-attacking jet jocks who don't remember what a knot is.) Then out for a late lunch after a marathon debriefing in accordance with MAC Reg umpty-ump. After lunch, into the air again, but this time only for a short FCF and another marathon de-

briefing with maintenance.

A little more paperwork and it was five o'clock (duty day ends at four-thirty but my boss says five is even better OER material). Just as I finished arranging all the work I hadn't done today in the proper sequence for not doing it tomorrow, the SOF walked in. It turned out that, since everyone had left half an hour ago, one other eager beaver and myself were the only ones available for an engine run that Maintenance said just had to be done today. I did the requisite amount of griping (17 minutes for an after-hours engine run) and headed out to the aircraft, hoping to get it over with before Wonder Woman showed up on the tube.

I was copilot on this one so I got out my checklist and got ready to preflight. The AC, who was busy with the forms, suggested I go ahead; he'd join me presently. This seemed like a good idea (remember Wonder Woman), so I began. "Crew and pax—briefed, cabin interior—checked," I mumbled, challenging and responding myself. On it went until the AC joined me at about the before-starting-engines checklist. By then, I'd gotten so used to responding to myself that sometimes I'd respond and sometimes the AC would. Things probably sounded a little haphazard to the crew chief, but we knew that everything was under control. After all, we were both experienced pilots who knew the checklist almost from memory. We thought.

"Rotors—clear and clean tip," I challenged and responded.

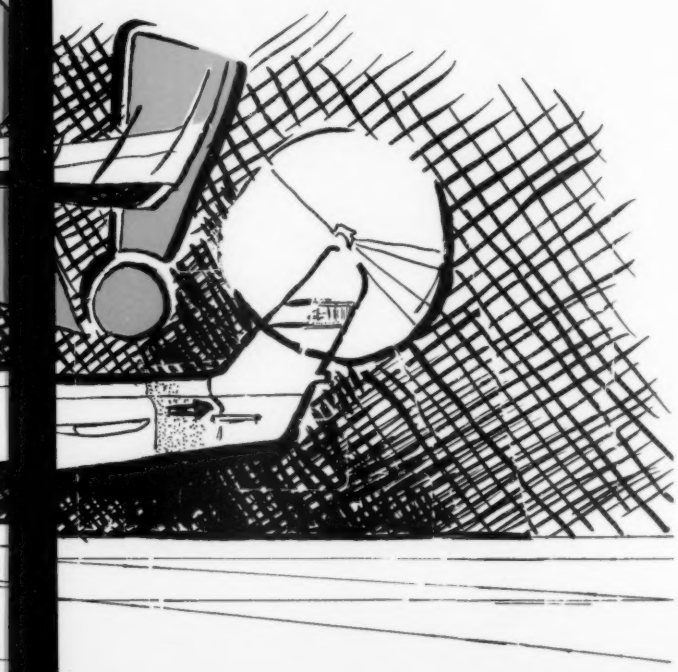
"Clear right," the AC remarked—even though he couldn't actually see the rotor blade because it was a little further aft than normal and the bulkhead was in the way.

"Fire guard—posted," I responded for the crew chief—who wasn't actually posted, but had walked back to remove the tiedown which the AC hadn't been able to see dangling from the rotor tip.

"Engine—turning one," the AC said. The engine did, indeed, begin turning. So did the rotor blade. And so did the crew chief, who was hanging onto the still-attached tiedown. We decided to abort the start as he passed the front of the aircraft, screaming obscenities. He managed to get the tiedown off before it could tangle in the tail rotor, thereby saving three rear ends—one belonging to the aircraft and the other two to the pilots.

They say experience is the best teacher, and this one certainly taught us a thing or two. And just in case you think this kind of thing only happens to new guys, consider this: the AC was a standardization type with umpty thousand flying hours.

All accident-free, of course.



Maximum Effort

After making a series of landings, a C-130B crew on a local training mission commenced a maximum-effort takeoff. At about five knots below rotation speed, they heard a loud snap and number one engine instantly lost power. The rapid loss of thrust, coupled with the drag of the now-windmilling propeller with the other three engines at takeoff power, caused extreme directional control problems. The aircraft yawed about 30 degrees left and departure from the 150-foot-wide runway appeared imminent. The instructor pilot, flying the aircraft from the left seat, reduced power on all engines and by using maximum rudder, nose wheel steering, aileron, differential braking, and differential power, regained control of the aircraft. The crew shut down the failed engine and stopped the aircraft safely on the remaining runway. For their skill and proficiency in handling a critical takeoff emergency, Capt Richard P. Blume, aircraft commander, Capt Myron G. Ashcraft, instructor pilot, MSgt Charles R. Ritter, flight engineer, and Sgt Merle R. Margot, flight engineer, 179 TAG (ANG), Mansfield Lahm Aprt, Ohio, were nominated for the USAF Well Done Award.

Pressure Point

Maj Richard A. Mickelsen, aircraft commander, and Maj David B. Almy, copilot, 1550 ATTW, Kirtland AFB, New Mexico, were performing a functional check flight of an H-1F when the hydraulic caution light illuminated. An unusual sound accompanied fore and aft cyclic movement and pressure varying from 50 to 150 pounds pulsated through the stick, attempting to drive the cyclic to the left. Major Mickelsen declared an emergency, began a descent to an auxiliary landing field, and instructed the copilot to assist in stabilizing the aircraft. Because of the extreme pressure, Major Almy had to grasp the cyclic with both hands and lock it between his knees while bracing his feet on the antitorque pedals to gain increased leverage. Positive control was maintained throughout the descent and the crew made a successful slide-on landing. For their coordinated crew effort which prevented a possible accident, Major Mickelsen and Major Almy received the MAC Distinguished Individual Safety Award.

USAF Flight Safety Plaques

Air Force chose seven MAC units to receive the USAF award for meritorious achievements in accident prevention during 1977:

The 375 AAW, Scott AFB, Illinois, flew more than 18,000 hours in the C-9A, completing seven years of safe flying. The 375th passed the 150,000-hour milestone mark in January 1978.

The 1 HS, Andrews AFB, Maryland, flew more than 4,000 accident-free hours, completing over 20 years and 80,000 hours in helicopters without an accident.

The 435 TAW, Rhein-Main AB, Germany, achieved 9,000 hours in the C-9, C-130, C-135 and C-140 during 1977.

The 437 MAW, Charleston AFB, South Carolina, flew over 65,000 C-141 hours; its total of safe flying hours is over 150,000.

The 60 MAW, Travis AFB, California, completed more than 65,000 C-5 hours during the year without an accident.

The 314 TAW, Little Rock AFB, Arkansas, flew more than 61,000 accident-free hours in the C-130 during the award period.

The 1550 ATTW, Kirtland AFB, New Mexico, completed over 12,000 accident-free helicopter hours in 1977 for a total of over 18,000 hours since the last accident.

Landing Safety

The crew of an H-1F had just completed a functional check flight and Capt Leroy G. Jackson, Det 5, 37 ARRS, Malmstrom AFB, Montana, the aircraft commander, entered a downwind for landing. Just then a loud bang was heard and all engine and rotor indications began decreasing. Captain Jackson immediately entered autorotation. Despite the light rain which hindered visibility, he was able to safely autorotate into a tight area—a newly plowed field, with wires on one side, a stream bed on another, and steep terrain in yet another direction. For bringing the aircraft and crew down without harm, Captain Jackson received the MAC Distinguished Individual Safety Award.

AFRES Pilot Wins Kolligian Trophy

Maj Gale H. French, flying safety officer for the 439 TAW (AFRES), Westover AFB, Massachusetts, was named by USAF as a winner of the Koren Kolligian, Jr. Trophy for his superior performance during an in-flight emergency. Major French prevented the flaming C-123K aircraft in which he was flying as copilot from impacting in a heavily populated area and accomplished a successful crash landing on the air base's main runway, despite extreme aircraft damage and intense smoke. Congratulations to a courageous pilot! (See "Good Show," *TMF*, Apr 78.)

Good Service Given Here

MAC's top maintenance units have been chosen for outstanding performance in fiscal year 1977. Named as the command's best for the year were the 314 OMS, Little Rock AFB, Arkansas, Outstanding Organizational Maintenance Squadron; 60 FMS, Travis AFB, California, Outstanding Field Maintenance Squadron; 605 MASS, Andersen AFB, Guam, Outstanding Military Airlift Support Maintenance Activity; and 619 MASS, Hickam AFB, Hawaii, Outstanding Military Airlift Support Squadron En Route Maintenance Activity.

Congratulations to these units and thanks for the good support.

Change of Command at *TMF*

That's right—the World's Greatest Flying Safety Magazine has a new supervising editor. He's Maj James G. Gibson II, a senior navigator who spent his previous tour as Information Officer at the 436 MAW, Dover AFB, Delaware. An old MAC type, Major Gibson began his flying career in 1965 at Hill AFB, Utah, in the C-124. Since then, he's logged over 6,000 hours in Shakeys, C-133's, C/HC-130's, and C-5's.

Major Gibson replaces Lt Col Orlen L. Brownfield, who's been with the mag since 1975 and became supervising editor in 1977. Colonel Brownfield is on his way back to the cockpit—a C-141 assignment with 15 MAS, Norton AFB, California.

Major Gibson and Lieutenant Colonel Brownfield discuss some of the fine points of editing TMF.

C-74 Globemaster

Designed during World War II, the Douglas C-74 was the first U. S. aircraft specifically developed as a long-range heavy transport. The Globemaster's design features included an A-12 autopilot, an electric cargo lift in the rear fuselage, and integral wing fuel tanks—all advanced technology at the time. Separate bubble canopies for the pilot and copilot gave the first C-74's a strange, bug-like appearance. The twin domes were later replaced by a single canopy.

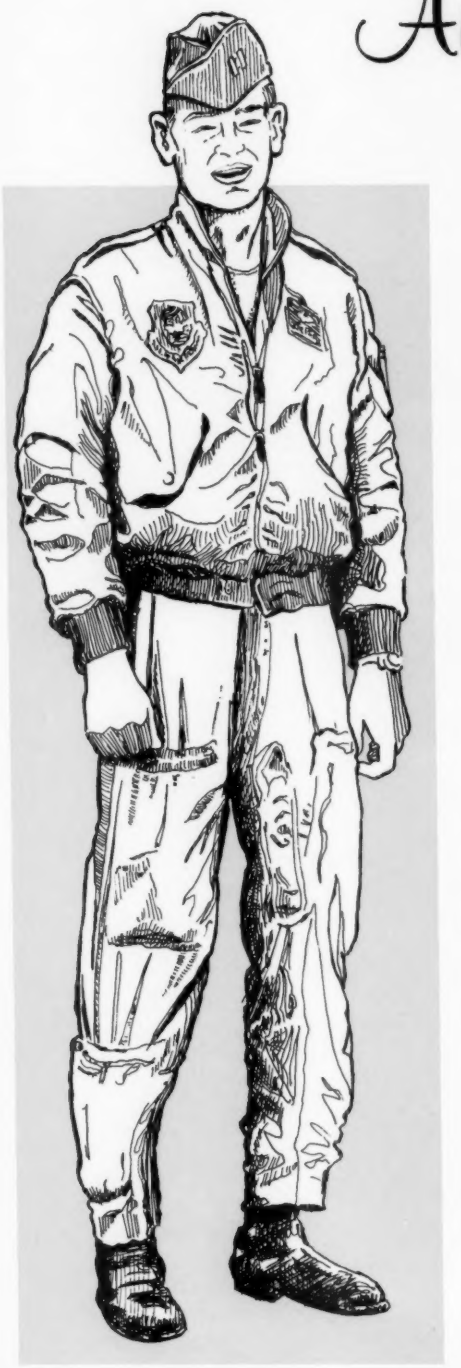
Four Pratt & Whitney R-4360-49 engines, rated at 3,500 horsepower each, propelled the big bird at a cruising speed of 176 knots. The C-74 spanned 173 feet, was 124 feet long, and could haul a maximum cargo load of 55,586 pounds. It could

The Airlift Legacy

also carry 125 passengers or 109 litters.

Fourteen Globemasters were built between 1945 and 1947. Two of the aircraft were used for test purposes; one became the prototype for the C-124 Globemaster II, and the rest flew worldwide MATS missions between 1946 and 1955. Maintenance and parts problems finally forced the Globemaster into retirement, but the aircraft had established a very impressive record before the last one disappeared into the boneyard. During their nine years of service the C-74's logged about 100,000 flying hours and 21,000,000 miles—all without a single fatality, serious injury, or pilot-error accident.

An Average Pilot



(with apologies to W. H. Auden)

He was found by investigators to be
One against whom there was no complaint,
And all his OER writers agree
He could easily pass for a saint;
For all that he did served the airlift community.

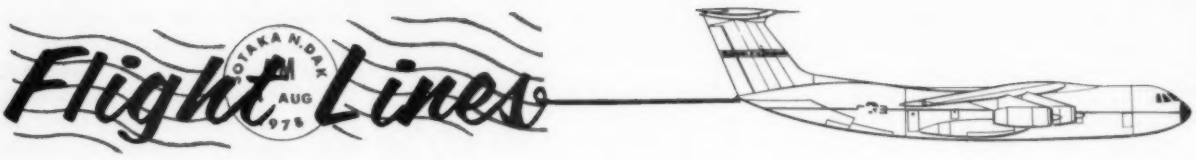
Except for a short tour, till the day he expired,
He flew the line and never got fired,
But finished his training and took all his checks,
Made his takeoffs on time and commanded respect;
His physical shows he was not overweight
And the dentist has said that he kept every date.
Our psychologist found he was popular with the crew
And was sometimes known to drink a few.
His boss is convinced that he worked every day
And his reactions were normal in every way.

The policies show he was fully insured,
He saw the flight surgeon some, but always was cured.
Both his wife and the credit union declare,
He was sensible with saving, the installment plan
And had everything necessary for the modern man,
Stereo, TV, two cars, a frigidaire.

His opinions were proper for his rank and job,
His official picture's correct and says he was no slob.
He was a professional airman. When there was war,
he went.
He was well decorated and considered it time well spent.

A three a.m. alert was this mission's demand,
An average time for the airlift command.
He briefed and planned and ate and departed
His needs fulfilled, his effort wholehearted.
He crashed, killed the crew, broke up the bird.
Pilot error? Absolutely absurd!
If anything had been wrong, we'd certainly have heard.

by Capt James P. Coe
Associate Editor



All the Way?

We noted with particular interest your "Notable Quote" (*TMF*, Apr 78). The following notable (?) statement was extracted from an AF Form 8 completed by a MAC training base: "The local conditions were high gusty winds and local light turbulence. He (the pilot) had no major problems and flew the airplane all the way to landing."

Perhaps in light of the recent airliner that landed (ditched) in Florida, the above statement is more than apropos.

Lt Col David D. Wilson and
Capt Roger W. Hansen
436 MAW Aircrew Stan/Eval
Dover AFB, Delaware

★ Your apparently humorous quote also takes on new meaning in the light of two recent MAC accidents, reinforcing the adage, "Somebody fly the airplane!"

Herky Turkey

Regarding the illustration of the C-130 Flying Turkey (*TMF*, May 78, page 11). Shouldn't one of the props be "feathered?" Thanks for the great mag.

Capt George R. Henry
95 TAS
Waukesha, Wisconsin

Experience, Luck and Fools

Reading "Fools Rush In" (*TMF*, May 77), I was reminded of my UPT instructor's words during graduation cermonies back in 1962. "J.P.," he said, "with each set of wings we award, we also issue two sacks. The first sack is chock full, and it's labeled 'Luck.' The other sack is labeled 'Experience'; it's empty. In the years ahead, each time you draw from the 'luck' sack, make sure you put an equal amount into the 'experience' bag. With careful planning, the day you retire from flying you'll still have the same two sacks—the 'experience' sack full and the 'luck' sack empty. Then you use the two sacks to help tell war stories to your grandchildren."

P. S. Fast Eddie's Sage Brush is the greatest.

Lt Col James P. Morgan
HQ MAC/XPSS
Scott AFB, Illinois

★ Good thoughts. Similarly, we like to say that "luck is the crossroads where preparation and opportunity meet." Thanks, "Fast Eddie" has been advised.

More on "Reject!"

Just finished reading the article, "Reject" by Captain Gumble. His treatment of the subject is the best I have seen in print or heard in hangar flying. And the subject is so timely. All too often our C-141 rejects are done automatically without much thought of consequences.

Recalling the C-141 experiences of those around me, most of the rejects resulted in more damage than would have occurred had the crew taken off and returned for a landing. I am glad to see Captain Gumble put the subject in perspective.

Maj Gen John W. Collens
MAC Chief of Staff
Scott AFB, Illinois

In your article, "Reject" you may have aggravated a situation that we have been trying to eliminate: the multiple - abort - procedure - briefing (i.e., "No abort 15 knots below 'go' speed for the loss of all generators or main DC" or "No abort above 100 knots for any reason" and so on). In the paragraph "Making the Decision," the line between the necessary and the unnecessary may be vague but the guidance in the Dash One and MAC SUP 1 to 60-16 is concrete. The MACSUP: "Any crewmember noting a safety of flight malfunction prior to the word 'go' will state the word 'reject' . . . when reject is called prior to 'go' the takeoff shall be discontinued." The Dash One: "If a condition arises before 'go' speed is

reached which would make the take-off unsafe, the crewmember observing the condition will state 'reject.' "

In the case of the malfunctions presented for the engineer or loadmaster, no other course of action could be taken. Since neither position is equipped with an airspeed indicator, they are bound by the provisions of the directives. There should be no hesitation in their call.

Another factor that has been much mentioned relates to the entire article. Inasmuch as rejects on the C-141 are a rare occurrence, the cases cited may cause undue fear in some instances. This fear of rejecting may lead to conditions where a crew tends to handle malfunctions after getting airborne rather than on the ground where they may be more safely remedied.

Also due to the low experience level in all crew positions in the C-141, recommend that future articles state the published procedures. Many don't completely understand procedures and take articles of this nature as gospel.

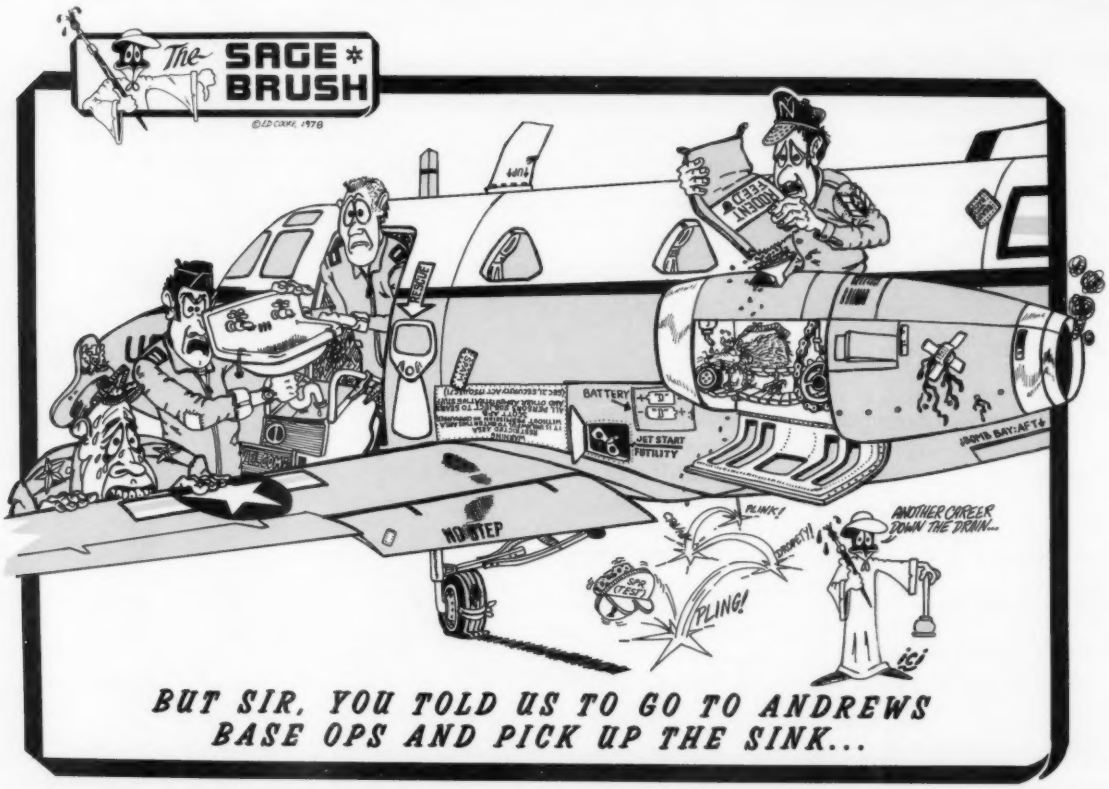
MSgt William L. Barber
14 MAS
Norton AFB, California

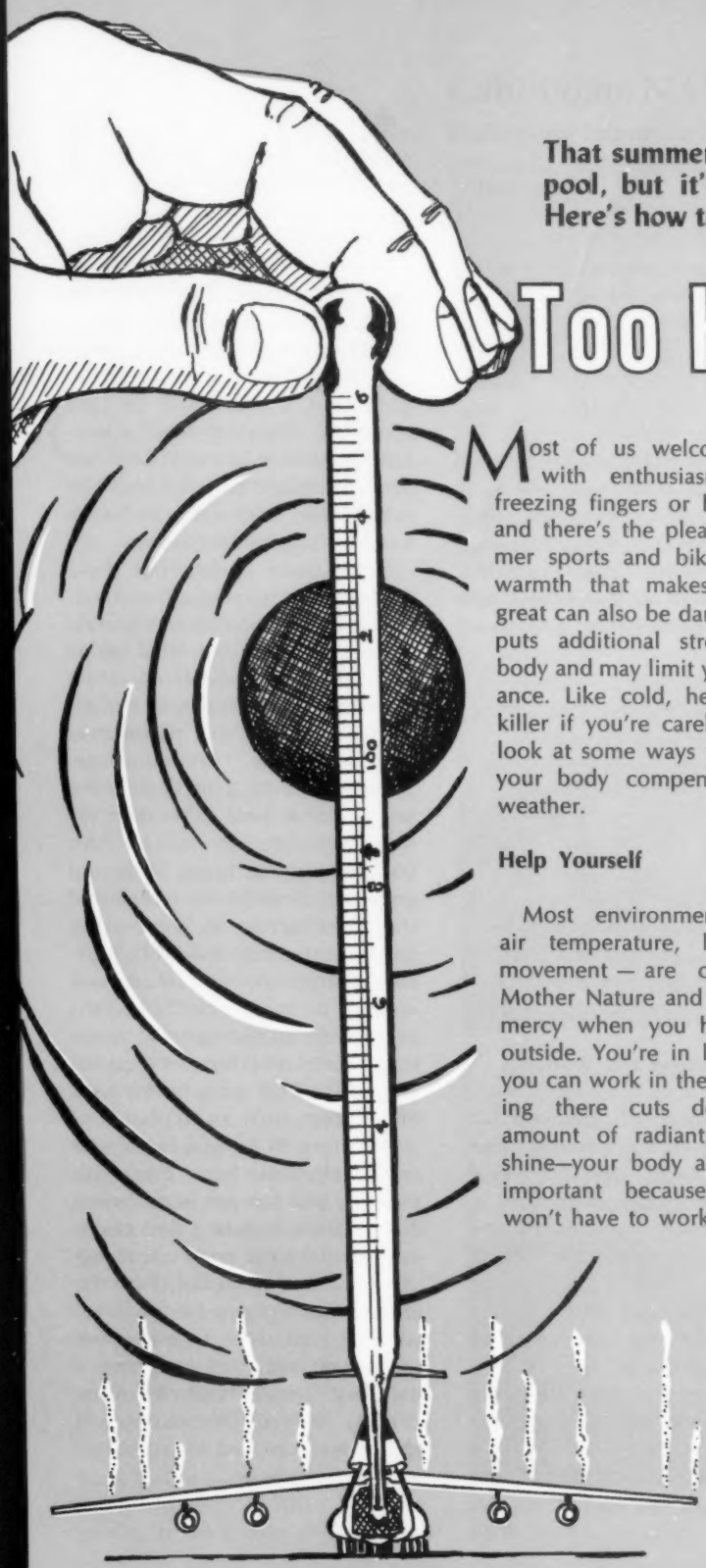
★ We don't feel that we questioned the requirement to abandon a take-off if someone calls, "Reject!" As you pointed out, the decision to make that call should be based on a "safety of flight" malfunction—we questioned what some might put in that category. As for printing the published procedure, keep in mind that we're a flying safety publication, not a standardization bulletin; read your pubs for that kind of guidance. If we're going to develop knowledge and judgment in those low-time crewmembers you talk about, we need to emphasize education—in addition to adherence to published procedures. TMF is an educational tool—we hope—and "Flight Lines" is an opinion forum; thanks for giving us your thoughts.

We welcome letters from our readers and print all that space and good taste will allow. Send your letter to:

The Editor, *The MAC Flyer*
HQ MAC/IGFE
Scott AFB, IL 62225

We'd like to have signed letters; however, we'll withhold the name at the author's request. Letters concerning controversial subjects are acceptable, but please address specific issues rather than personalities. We reserve the right to print letters whole or in part. —*Ed.*


The SAGE * BRUSH
©LD CRAIL 1978
BATTERY
JET START FUTILITY
NO STEP
PLINK!
PLING!
ANOTHER CAREER DOWN THE DRAIN...
BUT SIR, YOU TOLD US TO GO TO ANDREWS BASE OPS AND PICK UP THE SINK...



That summer sun may be nice when you're at the pool, but it's something else on the flight line. Here's how to make sure things don't get . . .

Too Hot To Handle

Most of us welcome summer with enthusiasm—no more freezing fingers or heavy parkas, and there's the pleasure of summer sports and bikinis. But the warmth that makes the season great can also be dangerous. Heat puts additional stress on your body and may limit your performance. Like cold, heat can be a killer if you're careless. Here's a look at some ways you can help your body compensate for hot weather.

Help Yourself

Most environmental factors—air temperature, humidity, air movement — are controlled by Mother Nature and you're at her mercy when you have to work outside. You're in luck any time you can work in the shade; working there cuts down on the amount of radiant energy—sunshine—your body absorbs. That's important because your body won't have to work so hard controlling your temperature through sweat evaporation. Also, while you're waiting to fly, if you start feeling a little flaccid, or if you're pooped from pushing pallets, you'll find the coolest place on a hot aircraft parking ramp is the shade under or near the downwind side of the fuselage. The shape of the airframe magnifies any breeze through the venturi effect. Just be sure to check the work going on around you so you won't be the victim of a dropped object—like the aircraft ramp.

There are several factors that you can control to make your body's temperature regulation easier. The more work you do, the more heat your body has to get rid of, so it helps to schedule most hard labor during cooler parts of the day whenever possible.

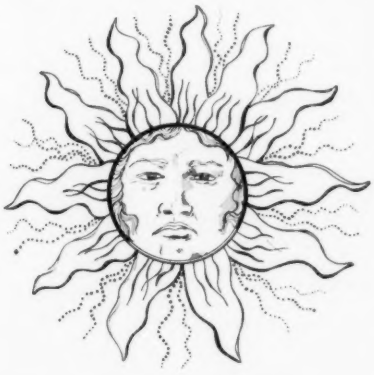
More easily controlled is the amount of water and salt you consume, the type of clothes you wear, and your personal habits. Sweating is your body's way of regulating its temperature and, despite what the antiperspirant ads tell you, you don't want it to stop. At about 78°F you may generally start to sweat and by the time the temperature reaches 95 degrees it is a necessity. Average workloads in hot weather cause

most folks to perspire at a rate of about one quart per hour—that can mean 10 to 12 quarts of water per day that you have to put back into your system. Replacement is simple: just drink more water. At times this may seem inconvenient—who really wants to walk three blocks in the hot sun into base ops to get a drink—but your body needs the extra liquid. And it's not as hard as it may seem, because most airlifters being prepared for flight have full water jugs aboard—another good thing to check before you take off into the summer skies.

Along with water, your body is losing salt when you sweat. Fortunately, this is easy to replace through a normal diet with a little extra salt added to the food. However, if you restrict your salt intake for medical reasons and you have to work in a hot environment, be sure to check with your doctor. Salt tablets aren't generally recommended by Air Force flight surgeons since they require careful use and may cause gastrointestinal and cardiovascular problems.

As crewmembers we don't get much choice about the flying clothing we wear. The Nomex green bags provided for our protection actually add to the body's heat load because they don't transfer heat well—a real plus if you're caught in a fire—and they absorb sweat poorly. When you have a choice, though, lightweight clothing that both reflects radiant energy and promotes sweat evaporation is best. If skin protection isn't a primary consideration, wearing less clothing is a good idea.

Personal habits and physical conditioning influence the way your body handles heat stress. Drinking a salty dog or Margarita may get you some of the salt and liquid that you need after a demanding game of golf, but excessive alcohol consumption dehydrates the body and lowers heat tolerance. We aircrewmembers are notorious coffee drinkers and it, too, has a dehydrating effect. Excess fat slows blood circulation near the skin and acts as an insulator, thus slowing heat loss. Basically, being in good shape and practicing moderation in food and drink will help you cope better with heat.



Notes, Cautions and Warnings

Your system will give you fair warning when it's suffering from too much heat. The first signal will be heat cramps—spasms in the involuntary muscles of the abdomen and extremities. You'll be sweating, but you're verging on a system overload, and it's time to stop and cool off. The cure for heat cramps is to replace the lost water and allow the body a chance to decrease its temperature. You may not need to see a doctor, but reexposure to heat should be avoided for awhile. If you ignore this first warning, really bad things can start to happen: heat exhaustion or heat stroke.

The symptoms of heat exhaustion suit the name. The victim feels weak and dizzy, probably has a headache and may notice some mental confusion and loss of coordination. His skin will be cool and pale. Sweating will be profuse. You should have him rest in a cool place with his feet elevated, offer him water and seek medical help immediately.

Heat stroke is rare, but it's a medical emergency. The heat-regulating mechanism has broken down and the individual stops sweating, the body temperature rises to a dangerous level (107.6° to 111.2°F), and the victim may suddenly lose consciousness. Symptoms leading to heat stroke are similar to heat exhaustion except that the skin will be hot, flushed, and dry; pulse, rapid and irregular. Immediate treatment should be aimed at keeping the person cool until medical help arrives. Place him in the shade and remove or loosen clothing. Fanning after sprinkling with water helps. Get immediate medical assistance and do not give any kind of sedative, such as alcohol.

Summer can be fun, but if you don't help your body deal with the heat you can get hurt. Proper diet, work scheduling and clothing can make the body's heat regulation job a lot easier. Remember that heat cramps are the initial warning sign, and if you ignore them, you may get to prove a corollary to Murphy's Law: "Things left to themselves will always go from bad to worse."

Deja Vu*

*(day-zha-voo), [Fr. lit., already seen], the illusion that one has previously had a given experience.

Cubi Point Naval Air Station is on the western coast of the island of Luzon in the Philippines, about 45 miles northwest of Manila, and 30 miles southwest of Clark Air Base.

A box canyon arrangement of high, rugged terrain on three sides of the field and limited room for maneuvering combines with extremely unpredictable weather to keep flying in the area challenging.

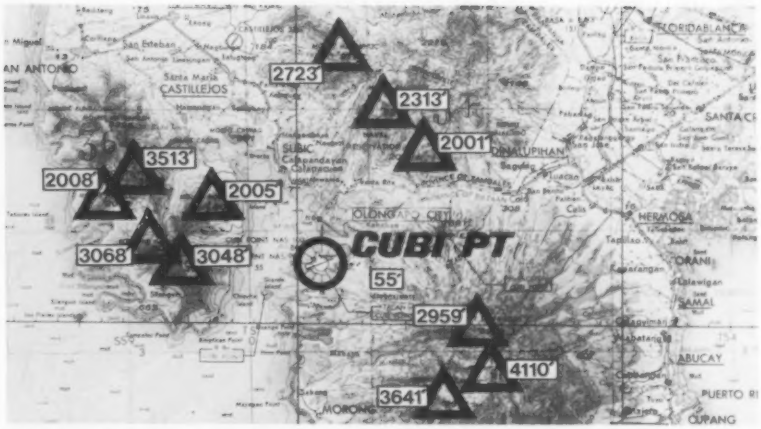
Cubi's 9,000-foot runway (07/25) sits on a peninsula on the southeast shore of Subic Bay. Mountain peaks as high as 4,000 feet within ten miles limit circling to the north of the field only.

Just to keep things interesting, anyone making an approach to runway 25 should be alert for helicopter traffic operating from a heliport located west of the runway. VFR fighter traffic can also be a problem. Go-arounds are relatively hazard free for 25, especially when compared to the same maneuver for 07, where a moderately dangerous situation results from the 1,600-foot mountains that jut up within five miles.

It's a good idea to double-check the weather, especially during the monsoon season, and plan your approach and missed approach procedures thoroughly. There's not much room or time to go back to the plates and charts and come up with a "plan B" once you're in the Cubi cul-de-sac.

Cubi Point NAS

Philippines (elevation 55 ft)

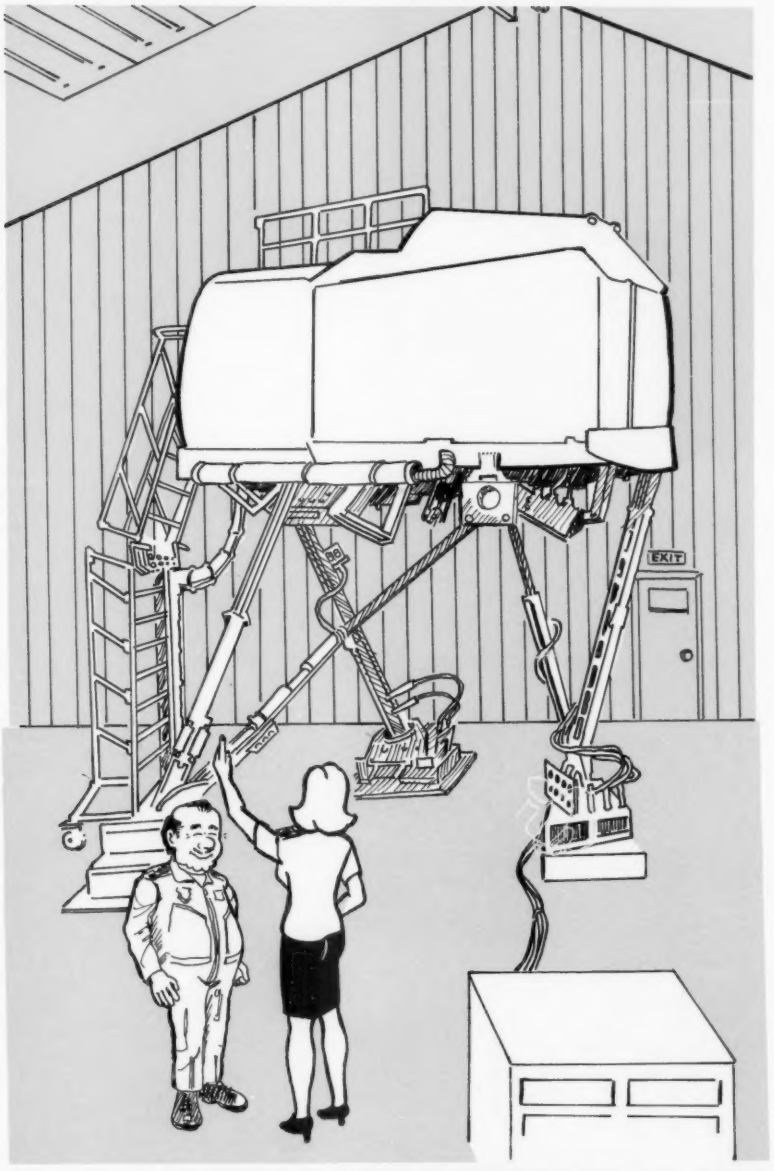


High terrain near the field is a major hazard at Cubi.

On short final to runway 07. Hills in background make a go-around sporty.

Runway 25 from one and a half miles. Don't overfly the fuel pier at lower right.

C.R. TERROR



It's man vs. machine as the Master Manipulator grapples with the marvels of modern electronics.

Arrgg, Mondays!" groaned the Bibulous Bachelor as he watched the blue staff car pull up in front of the officers' club.

"Good mornin', Majah. You ready t'go?" called Lieutenant Cindy Glosslips from the driver's seat.

"Certainly, m'little pigeon," C.R. responded as he settled into the passenger's seat. "You're more beautiful than I remembered," the Legendary Lecher cooed as they pulled away from the curb.

"Why, thank ya," drawled the lieutenant. "And it certainly was nice of you to agree to help me test the new simulator Ah helped design."

The Rotund One grunted acknowledgement. He still had some misgivings about his decision, but his memories of Cindy's beauty had quickly overcome his deep-seated antipathy toward things electronic that pretended to fly. Looking at the Luscious Lieutenant renewed his resolve to make the best of the situation.

Cindy took them to a large concrete-block building and ushered the Magnificent Major in to meet her boss, Colonel Displaix.

"I'm amazed that such a lovely head could contrive the computerized magic that Lieutenant Glosslips told me about," offered C.R.

"She's one of my finest project engineers, Major," the colonel boasted. "Has a degree in Cybernetics Engineering and designed most of the simulator you'll be flying. We're testing the two-man crew concept for transport aircraft—one pilot and one loadmas-

ter. I'll let Lieutenant Glosslips fill you in on the details."

Cindy led C.R. into a cavernous room where the simulator loomed imposingly before them. Cindy pointed to a console on the far side of the high-ceilinged chamber.

"I work over theah, and you get to do your thing up theah." She directed the major's gaze to a simulator cab atop a platform supported by ten-foot legs.

"Looks like a mechanical spider," commented C.R.

She led the Apprehensive Aviator up the steps and explained, "The simulator is complete with out-the-window visual displays, 30 degrees of motion in all three axes, and your pilot's station is surrounded by cathode ray tube displays that—"

"How about a stick?" the Impatient Pilot interrupted. "You do want me to fly this thing."

"Of course, sugah," soothed Cindy. "C'mon in and I'll show ya how it works."

As the Fat Flyer eased his flatulent physique into the left (and only) seat, he noted the cockpit bore little similarity to the "box" which had been a constant source of embarrassment to him from his earliest days of flying.

Cindy demurely placed herself on a gray electronics cabinet where the copilot's seat should have been. "We programmed the simulator to perform like a C-130 for you. Ah remembered all those wonderful adventures you told me about last yeah on our trip to Germany. This cockpit is designed to reduce your workload. Those CRT's—"

"You mean those TV screens?" interjected C.R.

"The CRT's," she emphasized, "are connected to three highly sophisticated, totally interphased computers that are fully mission capable and replace the copilot, engineer, and navigator."

C.R. asked the obvious, "What do you need me for?"

"We're working on that. But for now, the system is only as smart as its programmer—that's me—and its operator, that's you."

The lieutenant carefully explained the various controls, keyboards, and displays. "The two CRT's directly in front of you are the most important. They display flight control and performance information and replace the flight instruments. The first screen to your right displays systems performance and covers all the dials you used to need to tell if things were working right; it also includes the master warning system. The other screens provide information you ask for or should have. It's all in full color, of course—"

The Lothario of Airlift smiled knowingly as his attention drifted to the moist color of Cindy's lipstick and other things feminine.

"Now pay attention, suh," scolded the Southern Subaltern. "This is the data retrieval display. I've programmed in the entire contents of the tech orders for the C-130, plus all the Air Force and MAC flying regulations, the current FLIP and a listing of per diem rates worldwide."

"Crimenently! How'd you ever get a computer to understand all that stuff?" marveled C.R.

"Oh, it really doesn't understand," Cindy chuckled. "It just remembers. And we found that the memory unit weighs less than four flight-crew briefcases."

"Can I watch Monday Night Football on this thing?" prodded the Portly Pilot.

"No, suh, but the nav computer

knows the flight plan, sets up all the navaids in sequence, and keeps track of the flight with triple-redundant INS and a Navstar tracker."

"I suppose it also tells pilot jokes," retorted C.R.

"No, we haven't included a voice capability for the computer, yet," Cindy laughed and added, "You ready to give it a test hop, Majah?"

"Of course, pigeon. There isn't an aircraft in the MAC inventory that I haven't mastered," boasted the Ace of Airlift. "With this computerized crew, it should be a piece of cake."

"Okay. We'll fly a practice mission from Wright-Patt to Tinker with a couple of little ol' emergencies. And good luck, sugah!" the Lissome Lieutenant called as she departed the platform.

"Major Terrah," Cindy's soft voice oozed through the headset, "the simulator is ready. Just push 'go' on the right-hand control display unit."

A pudgy digit depressed the appropriate key and the CRT on C.R.'s right spelled out, "Cockpit check complete." A second later it instructed, "Call—# 1."

C.R. typed in the message and the before-starting-engines checklist appeared. The first step read, "Forms checked. Call—781 and 365F." A flashing purple pentagon preceded each item that hadn't been accomplished.

The computers led the Field-grade Fumbler through the checklists, helped start the engines, and reminded C.R. to request an ATC clearance. Each time the computer displayed new information it sounded a G-minor chord in the headset. C.R. taxied the bogus airlifter out of the pretend parking place under the guidance of a computer-generated marshaler and moved onto the runway.

The electronic wizardry cranked out the takeoff data and displayed the speeds on the ADI screen. C.R. pushed a pudgy paw full of throttles to the wall and released brakes. Just before the pseudo-Hercules lifted off, the Rhinestone Flyboy raised the gear handle, but the computer delayed the downlock release until it sensed a positive rate of climb. The Operator Efficiency Readout (OER) recorded the error and rated C.R. "three."

"Autopilot on," the Solo Skipper commanded to the empty cockpit. A portly pinky engaged the altitude-capture, autothrottle, and INS-nav coupler. "Baby-sitter to a gaggle of electrons," he groused. "Too bad I don't have my portable potable kit. Cindy and I could share a Terrorific 'Tini."

The synthetic C-ship cruised effortlessly in the computer-generated blue above a geometric cloud pattern. Automatic controls made the turns on time and set the power for optimum fuel economy. The serenity was punctured occasionally by a simulated call from Center.

Again the now-familiar chord sounded and C.R. checked the CRT's. To the right a red warning flashed, "Leading edge overheat. Right wing, outboard. Call—E-3-22."

Suddenly alert, the Rotund One pushed the keys. The CRT to his left displayed a diagram of the bleed air system with the offending components highlighted in red while the right-hand CRT showed the corrective action from the Dash One. A purple pentagon flashed next to the first step, "Number 3 and 4 bleed valves—close."

C.R. glanced at the overhead panel, found the vermillion-illuminated bleed-air-valve switches, and pushed them. Properly set, they beamed back a "press on" green.

But the warning continued to flash. "Dumb machine," murmured C.R. "Can't do anything right."

The right screen pointed out, "Number four bleed valve not closed. Recommend engine shutdown within 32.6 seconds. Call—E-3-3."

"Might as well cooperate with this thing till it kills itself," relented the World's Greatest as he keyed in the code. The engine

indicators showed number four engine off and the prop feathered.

The Dynamic Man-Machine Duo ran the cleanup checklists and started a descent toward Tinker. As the altitude passed 3,000 feet the computer announced, "Recommend manual control due to engine-out condition."

"It's about time!" C.R. said to himself.

With only minor prompting from the mechanical marvel, the Master Manipulator flew an acceptable ILS. He arrived a bit high at the glide slope, overruled the computer, and lowered full flaps. The OER rated him "two." At 100 feet above decision height an amber "DH" appeared on the ADI screen. C.R. started looking for visual cues—no luck. The amber symbol turned orange, then red. Finally, "GO AROUND" flashed across the CRT.

C.R. cobbed the power on the three good engines, and the make-believe Herk yawed sharply to the right. He countered with left rudder and the plane started a sharp yaw back to the left. The Bibulous Bumbler fed in right aileron. As the nose tried to force itself up, the airspeed dropped and the warning panel went wild. "STALL" flashed across the ADI unnoticed as C.R. searched outside for the horizon. The out-the-window, full-color displays turned brown. Suddenly, the CRT's went blank and C.R. held on desperately as the mechanical monster bucked and rolled violently. Then there was only darkness and silence. The dazed Computer Cruncher spotted a thin line of light showing under the door and scrambled for it.

Cindy's console was a mess—cracked instruments, smoking screens, and shredded computer paper everywhere. The now Lachrymose Lieutenant was inconsolable. "You ruined it! Look what you did to my simulator!"

"Well, uh, I encountered some very unusual transient voltages and unpredictable electronic vortices that, uh, adversely affected the machine's ability to control itself," the Fraudulent Flyer hypothesized.

The commotion brought Colonel Displaix to the simulator room. "Congratulations, Terror! You proved that the stall and crash program works. It seems that some of our built-in safeguards need refinement — I've never seen anybody who could ignore so many well-planned, timely warnings so effectively. Hang around and help us out."

The Flabbergasted Flyer fumbled, "Well, I'd like to help, sir, but, uh, I've got a flight safety meeting to attend on Monday and instrument school starts on Wednesday, and uh—"

"I understand," Colonel Displaix sighed. "I'll see if Lieutenant Glosslips can snare us another—er, find us another volunteer. You don't happen to know anybody?"

C.R. frowned in thought for a moment. Then a sly grin spread across his chubby face. "There *is* a lieutenant at Small Pebble who might work out, sir," C.R. recommended as he started for the door. "His name is Hand—Hamilton Hand."

Quick Stoppers

Lightning Works in Strange Ways

During an approach to Bilbao, a DC-9 experienced two heavy lightning strikes accompanied by the sound of violent explosions and followed by right DC bus failure and loss of the right instrument system, autopilot, VHF comm-nav gear, and some of the engine instruments. At 1,500 feet, the crew discontinued the approach due to increasingly foul weather and diverted to Bordeaux. When gear was lowered at the alternate, the red and green nosewheel lights didn't illuminate, and a visual check by the tower confirmed that the nosewheel was indeed not extended. None of the accepted emergency routines would free the balky gear, so a nosewheel-up emergency landing was made. Everything went smoothly, and as soon as the airplane had come to rest, all aboard were safely evacuated. It took a crowbar to force the nose doors open, but all parts of the operating mechanism for the gear itself were found to be in good working order. Investigators concluded that the lightning strike caused a sort of "implosion" which forced the left door inward over two rows of rivets on the forward wheel-well bulkhead. Jammed up that way, the door locked the gear in so it was impossible to unlatch the over-center linkage even by using the emergency-gear-extension lever. Not your usual lightning damage to be sure, but another good reason to avoid any weather that even looks like it might contain high-voltage zappers.

Balky Bogie

A little ingenuity and a Conference Skyhook helped a C-5 crew overcome a gear problem after the left forward main gear indicated unsafe on gear extension. A scan of the offending wheels showed that the bogie had stopped rotating about 35 degrees short of the forward rolling position. Dash One normal and emergency procedures had no effect, and after conferring with experts via Skyhook the crew tried rotating the gear using the crosswind positioning knob. This brought the bogie to within three or four degrees of center, but when the crosswind setting was removed the bogie swung back to the original position.

The procedure that finally centered the balky bogie involved using both normal and emergency hydraulic pressure and simultaneously depressing the manual override buttons for down rotate on the normal manifold and outboard positioning on the emergency manifold. Each time the buttons were pushed the bogie rotated a little further; eventually the gear locked into place and the crew brought the jumbo in for a safe landing.

Maintainers found three defects that had caused the hangup: a loose spline adaptor retaining nut, worn segmented thrust washers, and a malfunctioning outboard positioning valve.

We Has Met the Enemy . . .

An HH-53C crew almost had the dubious distinction of shooting itself out of the sky while engaging in a little routine minigun practice. Everything was going along according to plan until about 45 minutes into the mission. A student PJ was letting fly with the number three minigun while the chopper hovered over the range. Suddenly the instructor PJ who was monitoring the novice gunner saw the long ammo chutes fly up into the field of fire. He immediately shut the gun down, but not before the clamps holding the tubes together were damaged and a lot of expended cartridges set free. No other damage was readily apparent at the time, but back on the ground the flight mech discovered that the blue tail-rotor blade tip had a square puncture and several dents from the expended shells. The real culprit in this near fiasco was not the crew, incidentally, but a minigun ammunition hose assembly that was too long and got blown into the line of fire. Replacements with a shorter hose are expected to take care of the problem.

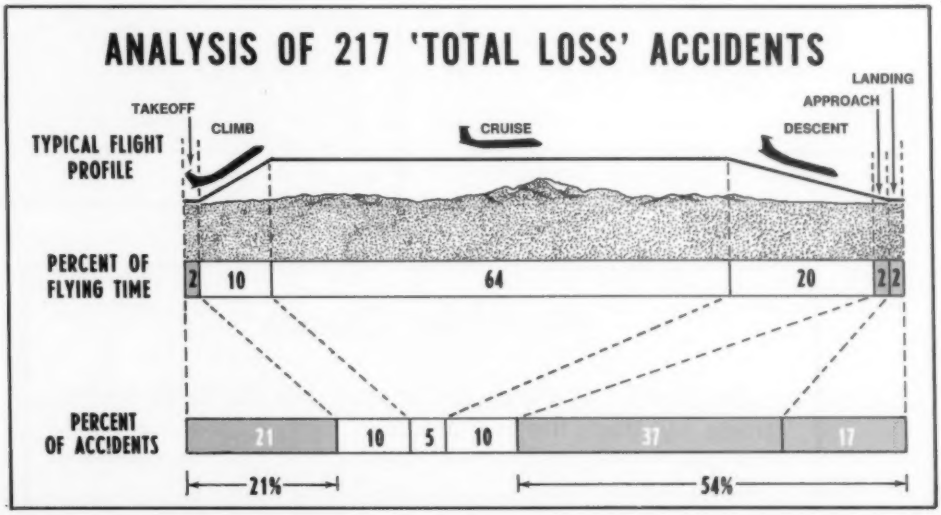
The Six Percent That Hurts

Most people are aware that a large number of aircraft accidents occur either during takeoff or approach and landing. Bob Belton of British Airways took a closer look at the cold, hard statistics of 217 worldwide jet "total loss" accidents from 1962 to 1976 and came up with a very graphic diagram that compares the percent of flying time devoted to various aspects of the mission with the percent of accidents that occurred during those times.

The "typical flight" portrayed is for an airplane that is flown 3,000 hours per year at a rate of 8:13 per day, and which makes five takeoffs and landings each day.

Here's the scary part—although takeoff consumed only 2 percent of the flight time, it accounted for 21 percent of the aircraft destroyed. Even worse is approach and landing, which, while consuming only 4 percent of the flying time, accounted for 54 percent of the destructions. Combining these two figures tells the grim story that 6 percent of the flying accounted for 75 percent of the lost airplanes. These sobering facts, along with some very recent class A mishaps in MAC aircraft that occurred during approach and landing, once again point up the fact that every takeoff, approach, and landing demands 100 percent professional airmanship on the part of every crewmember.

—Adapted from *The Cockpit*



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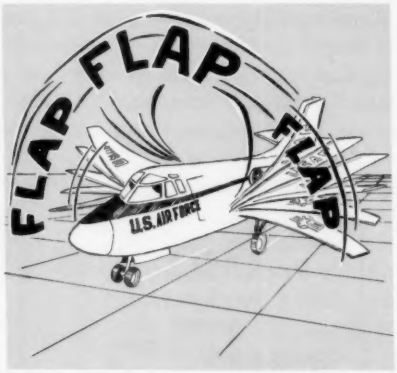
C-141 "Prop Job"

The agony of a late takeoff due to a loading delay was compounded considerably when a C-141 left the chocks with the loading struts still extended at the rear of the airplane. As soon as the Starlifter taxied forward, both struts broke off, much to the embarrassment of the two loadmasters who had failed to stow them when loading was completed, and the scanner who had failed to notice that they were still unstowed on his final preflight walkaround. To make matters even worse, the scanner called struts "stowed" on the before-starting-engines checklist, while all the time the two props were out in "plane" sight. The moral is simple on this one: Make sure when you respond to a checklist item that what you certify to has, in fact, really been accomplished. Don't assume nuthin'.

In a Bind

The Sabreliner's flight controls had checked normally in the chocks and during taxiout, but at rotation speed the bird didn't want to leave the ground. It finally flew off without positive rotation. Everything felt normal after gear retraction, so the crew pressed on. Then, on landing, there wasn't enough elevator travel for a smooth touchdown. During rollout, the elevator was very difficult to move.

The problem turned out to be a relay box cover in the aft fuselage compartment which had fallen off and was causing intermittent binding of the elevator control cables.



Notable Quote

The race is not always to the swift, nor the battle to the strong, but that's the way to bet.

—Damon Runyon

After Deadline

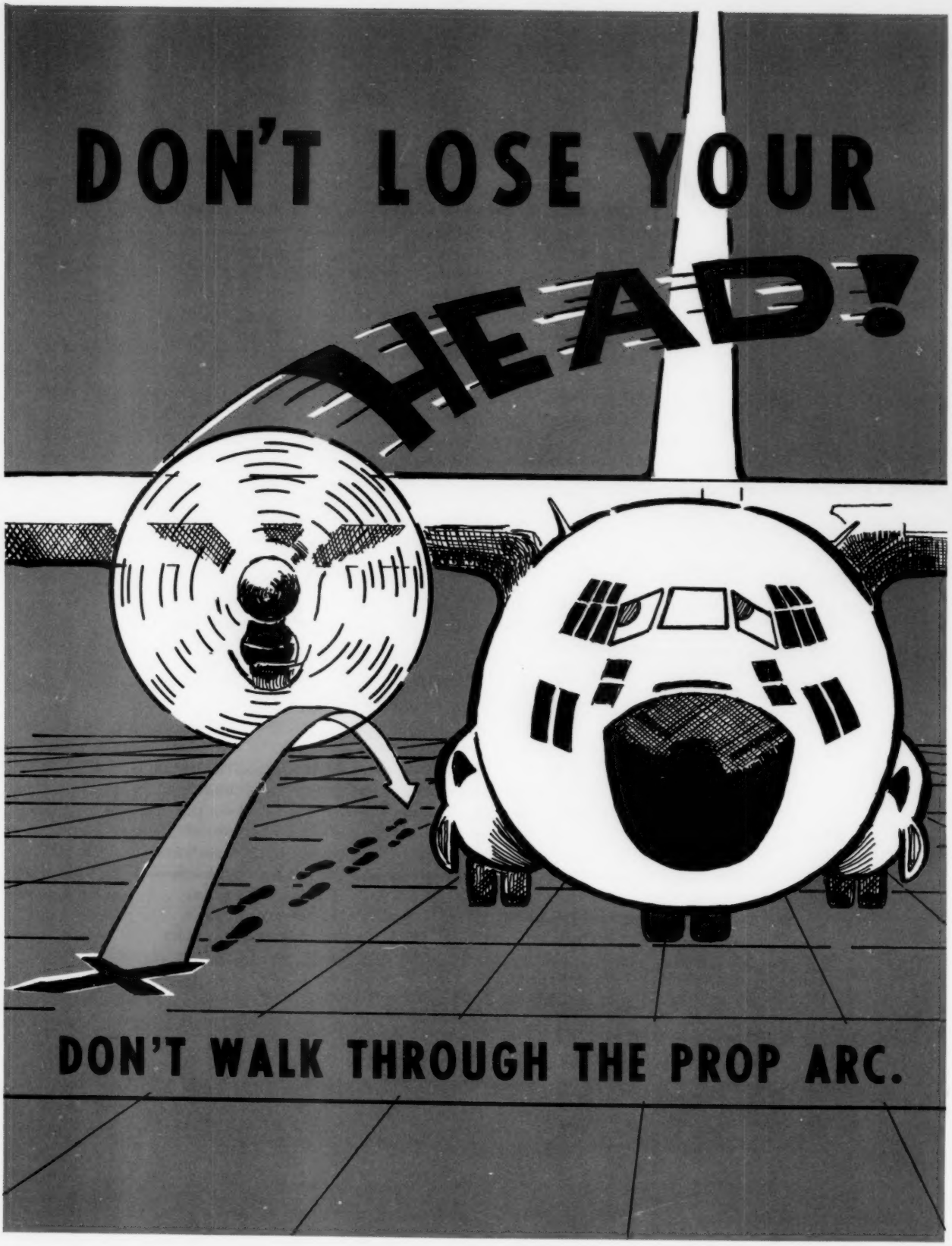
GENERAL MOORE REALLY WANTS TO KNOW what you think. To help him keep his finger on the pulse of opinion among MAC crewmembers, he's assigned Captain Jerry Lundquist as his Special Assistant for Aircrew Matters. With over five years in MAC as a flight examiner navigator, Jerry's job will be to listen to and represent the concerns of all MAC crews--directly to the CINC. He'll be meeting with you at your base and flying with you on line missions, or you can call him anytime at autovon 638-2041. Let him know how you feel.

SUPER SIMULATORS FOR THE C-130 will be on their way in the near future. The new "box" is an advanced design with computer-generated visual display; it can simulate day, dusk, night, bad weather, and other airplanes to fly formation with. You can use the machine to fly airdrops, AWADS, LAPES, low-level, or just about any other Herky mission. The first one should go into operation at Little Rock around June 1980, with delivery of nine more to various MAC bases beginning in February 1981.

THE C-141A WILL LEAVE THE INVENTORY by 1982. Beginning late this year, Starlifters will begin disappearing in the general direction of Lockheed-Georgia. They'll reappear later as stretched, air-refuelable C-141B's, recertified to a maximum gross weight of 344,900 pounds. If everything goes according to schedule, by July 1982 the "short" 141 will be only a memory.

WHY DO MAC PILOTS GET OUT? A pilot retention workshop held at MAC headquarters in June brought out quite a few reasons. Some were familiar, some not so obvious. Thirty-two pilots from 16 flying units talked with General Moore, General Ryan, and MAC staff members. Those who were leaving the service were very frank in stating their dissatisfactions, which ranged from excess additional duties to the OER system. Recent increases in airline hiring didn't come out as a reason for leaving, but rather as a factor which made the decision easier. MAC staffers are studying the workshop's recommendations, which have also been presented to a number of MAC wing and squadron commanders.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-765-097/4


DON'T LOSE YOUR
HEAD!
DON'T WALK THROUGH THE PROP ARC.